CLEAN VERSION OF THE AMENDED CLAIMS

1. (amended) Safety device (19) for limiting of current and voltage of an electrical consumer (15) connected downstream to the safety device (19) with at least one input connector (8) and one output connector (16) as well as input connector and output connector (10, 17) of a common line (12) wherein the safety device (19) includes at least one voltage and current limiting device (7,13, 14) and comprising at least one protective device (F 1) as a fusible fuse, a voltage limiter device (D3) referenced to the common line (12), a current limiter device (R6) connected to the output of the voltage limiter device (D3) as well as a protective circuit (20), which protective circuit (20) is disposed upstream at the voltage and current limiting device (7,13, 14), wherein the protective circuit (20) includes a field effect transistor (Q1) as a switching and regulating transistor, wherein the source drain leg (S-D) of the field effect transistor (Q1) is disposed between the input connector (8) and the voltage and current limiting device (7,13, 14) and

wherein the gate (G) is connected to the common line (12) through a resistor (R4) for feeding in the control voltage of the field effect transistor (Q 1), wherein a second transistor (Q2) is connected to the input connector (8) and to the gate (G) of the switching and regulating transistor (Q 1), wherein the collector (Q23) is connected to the gate (G) of the switching and regulating transistor (Q 1) for influencing the control voltage of the switching and regulating transistor (Q 1), and wherein [the] a voltage (U9,11) is fed back to the base (Q22) of the second transistor (Q2) over a feedback resistor (R3) from the output (9,11) of the protective circuit (20), wherein a voltage

C1 sensor circuit (Dl,RS) is disposed between the base (Q22) of the second transistor (Q2) and the common line (12) for voltage detection.

C2 5. (amended) Safety device (19) according to claim 1 characterized in that a resistor (R2) is disposed between the base (Q22) of the transistor (Q2) and the source (S) of the switching and regulating transistor (Q 1) for reducing the feedback current.

C3 8. (amended) Safety device (19) according to claim 1 characterized in that an additional second Zener diode (D4) is connected in series with the resistor (R4) for reducing the gate control voltage of the switching and regulating transistor (Q1).

9. (amended) Safety device (19) according to claim 7 characterized in that the second Zener diode [D2] (D2) and an additional third Zener diode (D4) are integral components of the switching and regulating transistor (Q1).

C4 16. (new) A safety barrier (19) for limiting the current and voltage of an electric consumer (15), for example, a transducer, connected after the safety barrier (19), said safety barrier (19) having at least one input connection (8) and one output connection (16) as well as input and output connections (10, 17) of a shared line (12), for example, a ground conductor, whereby the safety barrier (19) has at least one voltage and current limiter (7, 13, 14),

such as a Zener barrier, comprising at least one fuse (F1), such as a blow-out fase, a voltage limiter (D3) linked to the shared line (12), a current limiter (R6) connected to the output of said voltage limiter (D3) as well as an additional protective circuit (20), which is arranged before the voltage and current limiter (7, 13, 14), characterized in that

the additional protective circuit (20) has a field transistor (Q1) as the switching and/or regulating transistor whose source-drain link (S-D) is arranged between the input connection (8) and the voltage and current, limiter (7, 13, 14), and the gate (G) for feeding the control voltage of the field transistor (Q1) is connected via a resistor (R4) to the shared line (12), whereby a second transistor (Q2) is connected to the input connection (8) and to the gate (G) of the switching and/or regulating transistor (Q 1), whereby the collector ($Q2_3$) of the second transistor (Q2), in order to influence the control voltage of the switching and/or regulating transistor (Q1), is connected to the gate (G) thereof, and the voltage ($U_{9,11}$) after the switching and/or regulating transistor (Q1) after its drain (D) is fed back between the outputs (9, 11) of the additional protective circuit (20) via the feedback resistor (R3) to the base ($Q2_2$) of the second transistor (Q2), whereby for purposes of voltage detection, there is a voltage sensing circuit

(D1, R5) arranged between the base ($Q2_2$) of the second transistor (Q2) and the shared line (12)

or

for purposes of current detection, there is a series resistor (R1) arranged between the input connection (8) and the source (S) of the switching and/or regulating transistor (Q1) as a current sensor.

17. (new) The safety barrier according to Claim 16, characterized in that, pertaining to the additional protective circuit, concurrently for voltage detection as well as for current limitation, the series resistor (R1) is present in the form of a current sensor and the voltage sensing circuit (D1, R5) is present in the form of a voltage detector.

18. (new) The safety barrier according to Claim 16, characterized in that the voltage sensing circuit (D1, R5) comprises a Zener or trigger diode (D1) and a resistor (R5), which are connected in series.

19. (new) The safety barrier according to Claim 16, characterized in that the feedback current is set by means of the feedback resistor (R 3) or by means of the switching or regulating circuit in such a way that, in case of

overload, the load current is cut back to a minimum value and only after the application of a voltage (U_{8-10}) that is greater than the rated input voltage (U_{EN}) is the current switched off in the voltage and current limiter (7, 13, 14) and autonomously switched back on at the time of the subsequent lowering of the supply voltage (U_E) to the rated input voltage (U_{EN}).

20. (new) The safety barrier according to Claim 16, characterized in that, in order to reduce the feedback current in the additional protective circuit, a resistor (R2) is installed between the base ($Q2_2$) of the transistor (Q2) and the source (S) of the switching and regulating transistor (Ql).

21. (new) The safety barrier according to Claim 16, characterized in that the reference voltage or feedback voltage (U_{9-11};U_A) of the feedback resistor (R3) can be tapped directly after the drain (D) of the switching and/or regulating transistor (Q1) as well as at any desired circuit point of the current path between the line points 9 and 16, and is fed back to the base ($Q2_2$) of the second transistor (Q2).

22. (new) The safety barrier according to Class 16, characterized in that, parallel to the gate (G) and the source (S) of the switching and/or regulating

transistor (Q1), a Zener diode (D2) is applied between said gate (G) and the source (S) in order to protect the gate-source link (G-S).

23. (new) The safety barrier according to Class 16, characterized in that, in order to reduce the gate drive voltage of the switching and/or regulating transistor (Q1), a Zener diode (D4) is connected with the resistor (R4).

24. (new) The safety barrier according to Claim 22, characterized in that the Zener diodes D2 and/or D4 are integral components of the switching and/or regulating transistor (Q1).

25. (new) The safety barrier according to Claim 16, characterized in that, in order to set the feedback current, irrespective of the output or supply voltage, the feedback resistor (R3) is replaced by a switching or regulating circuit.

26. (new) The safety barrier according to Claim 25, characterized in that the switching or regulating circuit is a constant current circuit.

27. (new) The safety barrier according to Claim 16, characterized in that

said safety barrier has a reset means, for example, a button, for switching the additional protective circuit back on after the current has been switched off in the voltage and current limiter (7, 13, 14).

28. (new) The safety barrier according to Claim 16, characterized in that the second transistor (Q2) is an electronic relay or field effect transistor or thyristor.

29. (new) The safety barrier according to Claim 16, characterized in that a bipolar transistor or electronic relay is used instead of the field effect transistor.

30. (new) Electrical protective circuit for limiting of current and voltage, as safety barrier, for protecting an electrical consumer (15), with at least one input connection (8) and an output connection (9) as well as input connection and output connection (10, 11) of a common line (12), for example a ground line, wherein a voltage and current limiting device is disposed within the protective circuit, wherein the voltage and current limiting device includes a field effect transistor (Q1) as a switching and/or regulating transistor characterized in that

the source-drain-legged (S-D) of the field effect transistor (Q1) is disposed between the input connector and the output connector (8,9) and the gate (G) is connected to the common line (12) through a resistor (R4) for feeding in off the control voltage of the field effect transistor (Q1) and wherein a second transistor (Q2) is connected to the input connector (8) and to the gate (G) of the switching and/or regulating transistor (Q1), wherein the collector (Q23) of the second transistor (Q2) is connected to the gate (G) of the switching and/or regulating transistor (Q1) for influencing the control voltage of the switching and/or regulating transistor (Q1) and wherein the output voltage after the source-drain-legged (S-D) of the switching and/or regulating transistor (Q1) is fed back at the output connector (9) to the base (Q22) of the second transistor (Q2) through a feedback resistor (R3), wherein a Zener diode (DI) is disposed between the base (Q22) of the second transistor (Q2) and the common line (12)

or

a resistor (RI) is disposed as a current sensor between the input connector (8) and thc source (S) of the switching and/or regulating transistor (21) for current capturing.

31. (new) Electrical protective circuit for limiting of current and voltage, as safety barrier, for protecting an electrical consumer (15), with at least one input connection (8) and an output connection (9) as well as input connection and output connection (10, 11) of a common line (12), for example a ground line, wherein a voltage and current limiting device is disposed within the protective circuit, wherein the voltage and current limiting device includes a field effect transistor (Q1) as a switching and/or regulating transistor characterized in that

the source-drain-legged (S-D) of the field effect transistor (Q1) is disposed between the input connector and the output connector (8,9) and the gate (G) is connected to the common line (12) through a resistor (R4) for feeding in off the control voltage of the field effect transistor (Q1) and wherein a second transistor (Q2) is connected to the input connector (8) and to the gate (G) of the switching and/or regulating transistor (Q1), wherein the collector (Q23) of the second transistor (Q2) is connected to the gate (G) of the switching and/or regulating transistor (Q1) for influencing the control

voltage of the switching and/or regulating transistor (Q1) and wherein the output voltage after the source-drain-legged (S-D) of the switching and/or regulating transistor (Q1) is fed back at the output connector (9) to the base (Q22) of the second transistor (Q2) through a feedback resistor (R3), wherein a Zener diode (DI) is disposed between the base (Q22) of the second transistor (Q2) and the common line (12)

32. (new) Electrical protective circuit for limiting of current and voltage, as safety barrier, for protecting an electrical consumer (15), with at least one input connection (8) and an output connection (9) as well as input connection and output connection (10, 11) of a common line (12), for example a ground line, wherein a voltage and current limiting device is disposed within the protective circuit, wherein the voltage and current limiting device includes a field effect transistor (Q1) as a switching and/or regulating transistor characterized in that

a resistor (RI) is disposed as a current sensor between the input connector (8) and the source (S) of the switching and/or regulating transistor (21) for current capturing.